CLAIMS

We claim:

1.   A method of differentiating primate embryonic stem cells into neural precursor cells, comprising the steps of:

(a)   obtaining a primate embryonic stem cell culture,

(b)   propagating the stem cells, and

(c)   culturing the embryoid bodies in a medium containing an effective amount of fibroblast growth factor 2, wherein neural precursors are generated.

2.   The method of claim 1 additionally comprising the step of forming embryoid bodies from the propagated stem cells of step (b) before the culturing of step (c).

3.   The method of claim 1 further comprising the step of isolating the neural precursors by differential enzymatic treatment and adhesion.

4.   The method of claim 1 wherein the amount of fibroblast growth factor 2 in the medium of step (d) is between 10 and 20 ng/ml.

5.   The method of claim 1 wherein the embryonic stem cell culture is a human embryonic stem cell culture.

6.   The method of claim 1 wherein the culture of step (c) is at least 72% neural precursor cells.

7.   The method of claim 6 wherein the percentage of neural precursor cells is at least 84%.

8.   The method of claim 3 wherein the isolation procedure results in an enriched population of neural precursor cells, wherein at least 90% of the cells are neural precursor cells.

9.   The method of claim 8 wherein at least 95% of the cells are neural precursor cells.

10.   The method of claim 1 wherein the embryonic stem cell culture is selected from the group consisting of human ES cell lines H1, H9 and H9.2.

11.   The method of claim 1 wherein the embryonic stem cells are propagated on a feeder layer of irradiated mouse embryonic fibroblasts.

12.   The method of claim 1 wherein step (c) comprises pelleting the stem cells, resuspending in cell medium without fibroblast growth factor 2, and culturing, wherein floating embryoid bodies develop.

13.   The method of claim 1 wherein step (d) comprises culturing the embryoid bodies in a medium comprising insulin, transferrin, progesterone, putrescine, sodium selenite and heparin.

14.   An isolated cell population comprising at least 72% neural precursor cells.

15.   The cell population of claim 14, wherein the population comprises at least 84% neural precursor cells.

16.   The cell population of claim 15 comprising at least 90% neural precursor cells.

17.   The cell population of claim 16 comprising at least 95% neural precursor cells.